

\Title{Density measurements of shock compressed liquid D2 *}

\AuthorSurname{Da Silva}
 \AuthorGivenName{L.B.}
 \AuthorSurname{Budil}
 \AuthorGivenName{K. S.}
 \AuthorSurname{Cauble}
 \AuthorGivenName{R. C.}
 \AuthorSurname{Celliers}
 \AuthorGivenName{P. M.}
 \AuthorSurname{Collins}
 \AuthorGivenName{G. W.}
 \AuthorSurname{Hammel}
 \AuthorGivenName{B. A.}
 \AuthorSurname{Holmes}
 \AuthorGivenName{N. C.}
 \AuthorSurname{Wallace}
 \AuthorGivenName{R. J.}
 \AuthorSurname{Dixit}
 \AuthorGivenName{S. N.}
 \AuthorSurname{Kilkenny}
 \AuthorGivenName{J. D.}
 \AuthorAffil{Lawrence Livermore National Laboratory}
 \AuthorSurname{Ng}
 \AuthorGivenName{A.}
 \AuthorAffil{University of British Columbia}

We will report on preliminary experiments to measure the shock density of liquid D2 in the pressure range 1-3 Mbar. In the experiment a beam smoothed with a kinoform phase plate is used to drive a shock into a 100-200 μm thick aluminum cell which contains liquid D2. The trajectory of the aluminum/D2 interface and shock front in D2 was measured using side on radiography. This technique allows to measure the density in two ways. First by measuring the absorption and using calculated opacities and second by measuring the compression ratio directly from the position of the front and aluminum/D2 interface. We will present the results of these experiments which extend recent gas gun measurements which suggest a softening of the D2 equation of state due to dissociation.

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